

JUNIOR RANGER

Activity Book



Welcome to Shenandoah National Park!

Explore what makes Shenandoah a special place and learn how you can help protect it by becoming a Junior Ranger. All you need to do is:

1. Complete Arrowhead Adventures (page 1).
2. Complete at least five other pages in the Junior Ranger Book. A TRACK Trail activity guide can count as a page.

TRACK Trail activity guides can be found at Fox Hollow Trail (mile 4.6), the Limberlost Trail (mile 43), and the Blackrock Summit Trail (mile 84.8).

3. Attend a Ranger program. Fill out the name of the program and what you learned. Then ask the Ranger to sign off on your accomplishment.

Program: _____

What did you learn? _____

Ranger's signature: _____

For a full schedule of Ranger programs, look in the Park newspaper or ask at a visitor center. If there are not any programs available during your visit, go to a visitor center and explore the exhibits or watch one of the movies.

4. Take your finished book to the Dickey Ridge Visitor Center, Byrd Visitor Center, Park Headquarters, or the Park's Mobile Visitor Center. Ask a Ranger to review your book. Then recite the Junior Ranger pledge and get your official badge.

This book belongs to: _____

You can also send your finished book along with your mailing address to:

Shenandoah National Park
ATTN: Junior Ranger Program
3655 US Highway 211 East
Luray, VA 22835

Your address (if you're completing this book by mail):



Hi! I'm a Shenandoah salamander. I'll be popping up throughout the Junior Ranger Book with interesting tips and tidbits. While you're exploring, remember to leave things as you find them so other visitors can enjoy them, too.

Do you love Shenandoah? We Shenandoah salamanders love it so much that it's the only place on Earth that we live. We're hard to find, though. Chances are, the only Shenandoah salamander you'll see is me. But even if you don't get to see us, there are lots of plants, animals, mountains, and waterfalls to discover. Enjoy Shenandoah!

ARROWHEAD ADVENTURES

There are more than 400 national park sites in the United States. The National Park Service (NPS) preserves parks, battlefields, historic sites, recreation areas, and more. National parks are public lands that belong to all of us.

How do you know if you're in a national park? Look for the arrowhead! You can find it on signs, brochures, buildings, and Ranger uniforms. The arrowhead reminds us of all the things that national parks protect.

☼ Fill in the blanks to learn what the different parts of the arrowhead represent.

The _____ represents the wildlife protected by the NPS.

The _____ represents the plants protected by the NPS.

The _____ represents the beautiful scenery protected by the NPS.

The _____ represents the natural resources (like clean air and water) protected by the NPS.

The _____ represents the history and culture of our nation protected by the NPS.



Look for the arrowhead during your visit. How many did you see? _____

How many National Park Service sites have you visited? _____

Why do you think national parks are important? _____

The National Park Service was created on August 25, 1916.

How old is it now? _____

HABITATS ARE HOMES

A habitat is a place where a plant or animal lives. There are four major habitats in Shenandoah: forest, meadow, rock outcrop (or mountain peak), and aquatic (water). To protect wildlife, it is important to protect habitats. Habitats contain everything a species needs: food, water, shelter, air, and space or room to survive. If one of these is missing, animals and plants can become threatened or endangered.

Look for all four habitats as you explore Shenandoah. Do you notice different types of plants and animals in each habitat?

☼ Draw a line connecting each animal to the habitat where it lives.

What natural events or human activities can change the habitats in Shenandoah and affect the plants and animals that live here?

FOREST

MOUNTAIN
PEAK

MEADOW

AQUATIC



2

SENSORY HIKE

Shenandoah welcomes over a million visitors each year because of the stunning views, tumbling waterfalls, great hiking trails, beautiful plants, and diverse wildlife.

☀ Take a walk in the Park and do at least five of these activities along the way.

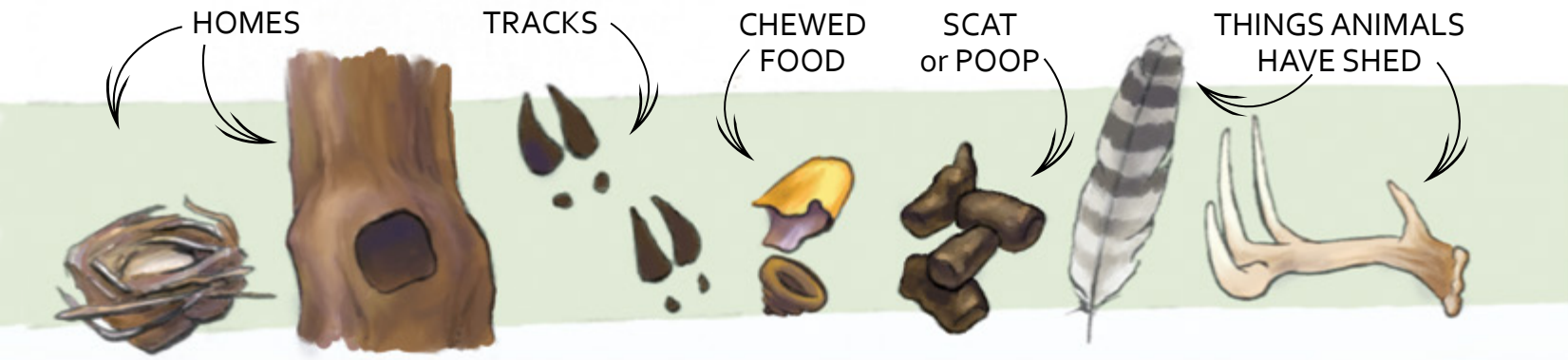
1. Listen to a bird. What do you think its call or song says? _____
2. Stand at a place where you can see a view of the valley or hills below.
What do you feel? _____ How do you feel? _____
3. Find a wildflower. What does it smell like? _____
Why are some flowers fragrant? _____ *Remember not to pick plants.*
4. Listen to a waterfall. What song does it sing? _____
5. Touch the bark of a tree. What does it feel like? _____
Can you wrap your arms around the tree? _____
6. Stand in the meadow. What do you think lives here? _____
7. Look for tracks or other evidence of animals on the trail.
Who was on the trail before you? _____
8. Find a seed or nut. What do you think eats it? _____
What can a seed grow into? _____
9. Imagine you are a bear. Do you see a good place to hibernate for the winter?
Describe it: _____
10. Sit still and silently in the forest for a few minutes like a fawn (baby deer).
What do you see and hear around you? _____
11. Dance like a butterfly flitting in the meadow.



BE A WILDLIFE DETECTIVE

You may not always see animals, but they leave evidence that they have been here. Park biologists often work like detectives to learn about wildlife. Think like a detective and look for clues on trails, in forests, and in meadows.

Here are just a few of the many clues you can look for:



- ⚙ As you explore the Park, draw or write a list of the clues you discover.
Write one thing that each clue tells you about the animal that left it behind.

A large, empty rectangular box with a hand-drawn black border, intended for a student to draw or write their observations.

THROUGH THE SEASONS

ACROSS

4. Virginia's largest mammal, the _____, is very active during the summer. Have you seen any in Shenandoah?

6. While the _____

solstice marks the shortest day of the year, it means daylight hours will start increasing.

7. In fall and spring, many birds _____ to find food. Can you imagine having two homes thousands of miles apart?

8. The _____ solstice marks the longest day of the year. Enjoy the sunset!

12. Named for the season when they become active and the sound they make, _____ are small frogs that can be heard day and night.

13. In the spring, _____ add a splash of color along trails and Skyline Drive. You can smell and photograph them, but leave them for others to enjoy.

14. Carrying _____ on your head requires a lot of energy. Deer shed them in the winter.

DOWN

1. During the winter you might find the tracks of this wildcat in the snow.

2. Snow melt and heavy rain make _____ put on a big show in the spring. Hear them roar!

3. Baby white-tailed deer, called _____, are born in late spring. White spots help them blend in and avoid predators until their legs grow strong. Shhh, don't give away their hiding places!

5. This insect communicates with flashing lights and makes summer evenings sparkle.

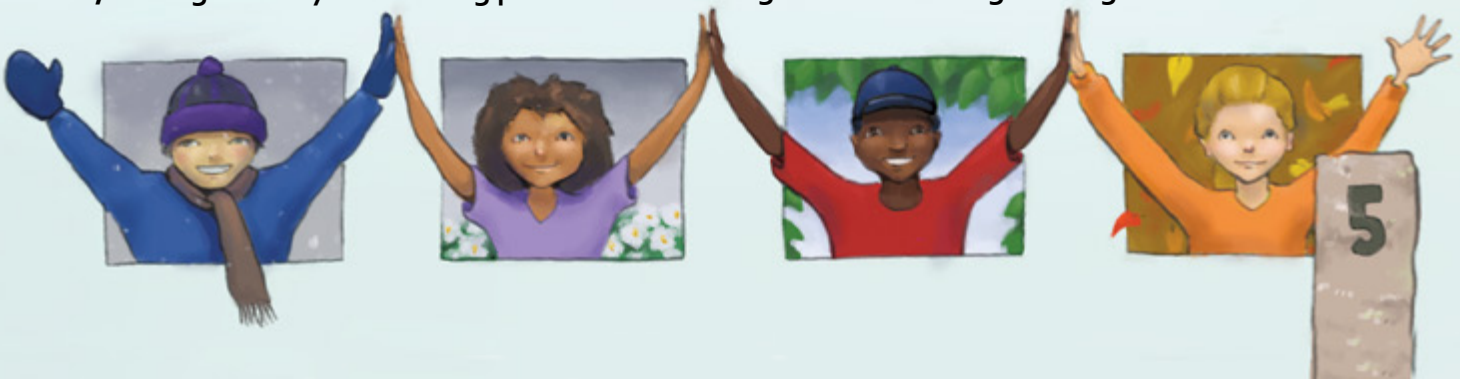
9. The oak-hickory forest of Shenandoah produces a lot of _____, a valuable source of winter fat and protein for animals.

10. Some animals _____ through the winter to deal with the lack of food. How long do you sleep?

11. In autumn, _____ change to red, orange or gold before falling to the ground.

Word Bank

antlers, black bear, bobcat, fawns, firefly, flowers, hibernate, leaves, migrate, nuts, spring peepers, summer, waterfalls, winter



Rock 'N' Roll

Shenandoah is made of rocks. There are mountains of rocks underneath the forest and soil. In some places the rocks are exposed. Look for rocks (outcrops, cliffs, boulder piles) at overlooks along Skyline Drive or on trails.

As rocks sit on top of mountains, many natural processes are trying to break them down into smaller pieces. This is called weathering.

☼ Look for the following examples of weathering and circle three that you find.

- Trees growing out of cracks
- Plants growing in cracks
- Water flowing through cracks
- Moss or lichen growing on rocks
- Ice or snow in cracks (freezing and thawing)
- Animals or insects living in cracks
- Chemical effects (from acid in rainfall)

Do you think these rocks will be here forever? Someday they are going to roll or move downhill! The process of rocks wearing away and moving downslope is called erosion.

- ☼ Circle the forces that cause rocks to roll.
- Sunshine
 - Wind
 - Starlight
 - Water
 - Gravity

- ☼ Weathering and erosion have made cracks in rocks that are great homes for living things. Find three things that live on, in, or under rocks. Draw pictures of what you find.



GO WITH THE FLOW

What happens to the rain after it hits the ground?

Sometimes rain or snowmelt soaks into the ground and becomes groundwater. It moves very slowly underground, squeezing through tiny cracks in the rocks. Eventually, the groundwater will find its way to the surface again, emerging as a spring or wetland.

When rain or snowmelt can't soak in, it quickly runs off the sides of mountains and grows from a trickle to a stream to a river.

- ☀ Find some natural water and answer at least four of these questions.

1. Observe the water. Is it moving or still?

Where is it going? _____

2. Listen to the water. How do you describe the sound? _____

3. What animals might drink this water? _____

4. Touch the water. How does it feel? _____

5. Look around. How many different plants are growing in and around the water? _____

6. Pick a rock out of the water. Is it rough or smooth? _____ Why? _____

7. Peek under the rocks. Do you see any animals in the water? What are they doing?

8. Why is it important to keep water clean?

A watershed is an area that drains into a river. Shenandoah National Park drains into three rivers (Shenandoah, Rappahannock, and James) on its way to the Chesapeake Bay. Its final destination is the Atlantic Ocean. Along the way it's used by plants, animals, and people. Eventually, a drop of water from Shenandoah could travel around the world!



If you find something living under a rock, be sure to put the rock back carefully when you're done. Be careful not to hurt your fingers, toes, or critters living underneath.

NATURALIST JOURNAL

Many people record their outdoor discoveries and experiences in nature journals. They write and draw their feelings and experiences with plants, animals, landscapes, and weather.

☼ **DRAW** - Find a flower, tree, feather, animal, view, or something else in nature to observe and draw below.
Be sure to leave everything where you find it.

☼ **DESCRIBE** - Take note of the weather. Is there rain, fog, or snow? Is it hot or cold? Is it windy? What do the clouds look like?

☼ **LISTEN** - Find a quiet place and listen to nature silently for 10 minutes. Draw or write down what you hear. Are sounds loud or soft? Human-made or natural?

☼ **CREATE** - Write a poem or draw a picture that shows how you feel about your experiences in nature.

ADAPTATION STATION

How do plants and animals survive outside in the heat, cold, rain, snow, wind, in storms, and even in wildfires? Some have special skills like camouflage, migrating, gathering in groups, or playing dead. Some have special body parts such as claws for climbing, thorns for defense, or wings for flying. These skills and body parts are called adaptations.

- ⚙ Create your own animal with unique adaptations. Think about where your animal would live. What dangers would it face? What adaptations could help it survive those dangers? Choose from the adaptations below or invent your own!



My animal's name is _____

My animal is special because _____

WHERE AM I IN SHENANDOAH?

Let's explore Shenandoah! A good explorer knows how to read a map and navigate.

⚙️ Study the park map and answer these questions.

1. A legend or key describes what the symbols on a map mean. Look at the key below.
How many visitor centers are there in Shenandoah National Park? _____
2. What is the name of the road that runs through the Park? _____
3. What is the highest mountain in the Park? _____
4. Called a "pass" in the west, a low point in the eastern mountains is called a "gap." Name three gaps in the Park. _____, _____, _____
5. Skyline Drive is 105 miles long. It starts at Mile 0 in Front Royal and ends at Mile 105 in Rockfish Gap. What mile is Loft Mountain Campground closest to? _____
6. Where does the Appalachian Trail enter the Park? (There are two places!) _____

7. When driving from Big Meadows to Rockfish Gap, what direction are you going? _____
8. When you are in Shenandoah, in which direction is your home? _____



Get your NPS passport stamps! There are several different stamps throughout Shenandoah. Check Park visitor centers and Park Headquarters to get stamps.

**Don't have a NPS passport book?
Stamp your Junior Ranger Book right here!**



WILD WORDS

Wilderness can be a lot of different things. It might be a forest or a desert. It might be your local park, or even your backyard. The United States has its own idea of what Wilderness means. Did you notice that the "W" is capitalized? That's because in 1964 the Wilderness Act determined what land is official Wilderness. Almost half of Shenandoah is protected as Wilderness.

⚙ What do you like about Wilderness? It can be something you saw or felt. Or maybe it's an idea you have about Wilderness. Write a poem about your favorite part of Wilderness.

EXAMPLE:

Deer

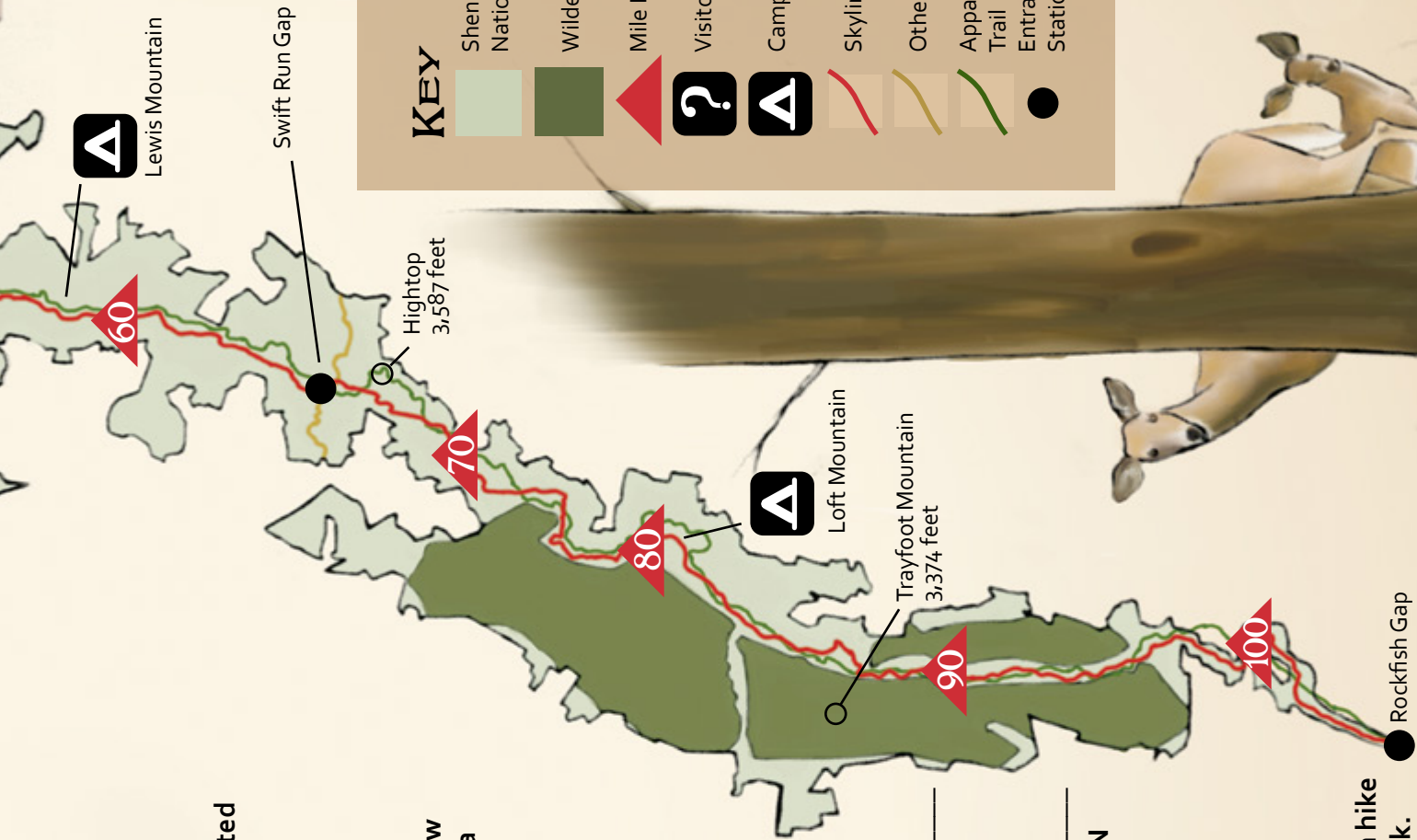
Running, Jumping, Eating
Fuzzy, Spotted, Cute
Love

THING

ACTION	ACTION	ACTION
DESCRIPTION	DESCRIPTION	DESCRIPTION

FEELING

Ask a Ranger to tell you where you and your family can hike through or see Wilderness in Shenandoah National Park.



TAKE A HIKE... ON THE A.T.

Do you enjoy a walk in the woods? Benton MacKaye and his friends did. In the 1930s they designed a trail where people could escape crowded cities for a few days, or even a few months! It stretched from Georgia to Maine. They called it the Appalachian Trail (A.T.) because it follows the Appalachian Mountains. It became a National Scenic Trail in 1968, and the NPS helps to manage it.



Today the A.T. is about 2,185 miles long. Most northbound thru-hikers, who do the whole trail in one year, leave Springer Mountain in Georgia in March. They have to reach Mount Katahdin in Maine by October 15, or they will find it closed for snow. Thru-hikers usually pass through Shenandoah in May and June.

☀ Imagine you hike 10 miles per day.

Days in a week If you have one week (that's seven days) to hike, could you make it all the way through Shenandoah?

7 x 10 = _____ miles you can hike in a week

Miles per day

So, can you hike all 101 miles of the A.T. in Shenandoah in one week?

How many days would it take you to hike the entire Appalachian Trail?

Length of A.T.

$2,185 \div 10 =$ _____ days to hike the A.T.

Miles per day



101 miles of the A.T. pass through Shenandoah National Park. Find the A.T. on a Park map and go for a hike. You don't have to do the whole thing! If you see another hiker, ask them how far they are going and how long they will be on the trail.

PACK IT UP

A.T. hikers have everything they need in their packs. To carry them the whole way, it's important they bring only what they need. Most thru-hikers keep the weight of their packs between 30 and 40 pounds.

☼ Circle the items that you would put in your pack and see how heavy your pack would be.

Cactus
2 pounds



Water Filter
3 pounds



Bowling ball
13 pounds



Maps
2 pounds



Tent
4 pounds



Flashlight and
batteries
1 pound



First aid kit
1 pound



Favorite book
4 pounds



Sleeping bag
3 pounds



Sodas
3 pounds



Camp stove and
cooking gear
5 pounds



Extra clothes
5 pounds



Water for one day
8 pounds



Food for five days
10 pounds



Skateboard
3 pounds



How many pounds does your pack weigh? _____

What extra things would you bring? _____

If your pack is over 40 pounds, what would you leave behind?



LEAVE NO TRACE

People can help protect special places like Shenandoah for future generations. The seven Leave No Trace Principles help visitors experience natural, wild places while protecting the plants and animals that live there.

⚙ For each Leave No Trace Principle, look at the pictures below. Are the visitors in the pictures doing the right thing? Circle *right* or *wrong*. Then answer why.

2. Choose The Right Path

Stay on the trail while hiking to reduce damage.



← Right or Wrong?

Why? _____

4. Leave What You Find

Leave plants, rocks, and artifacts for others to enjoy.



← Right or Wrong?

Why? _____

6. Respect Wildlife

Protect wildlife by not feeding animals and by storing food properly.



← Right or Wrong?

Why? _____

1. Know Before You Go

Know the rules for where you're going and what to bring with you.

Right or Wrong? →

Why? _____



3. Trash Your Trash

Take your trash with you when you leave natural areas.

Right or Wrong? →

Why? _____



5. Be Careful With Fire

Fires in Shenandoah are only allowed in permanent, Park-made fire rings.

Right or Wrong? →

Why? _____



7. Be Kind To Other Visitors

Respect visitors and their experiences in nature.

Right or Wrong? →

Why? _____



SALAMANDER WORD SCRAMBLE

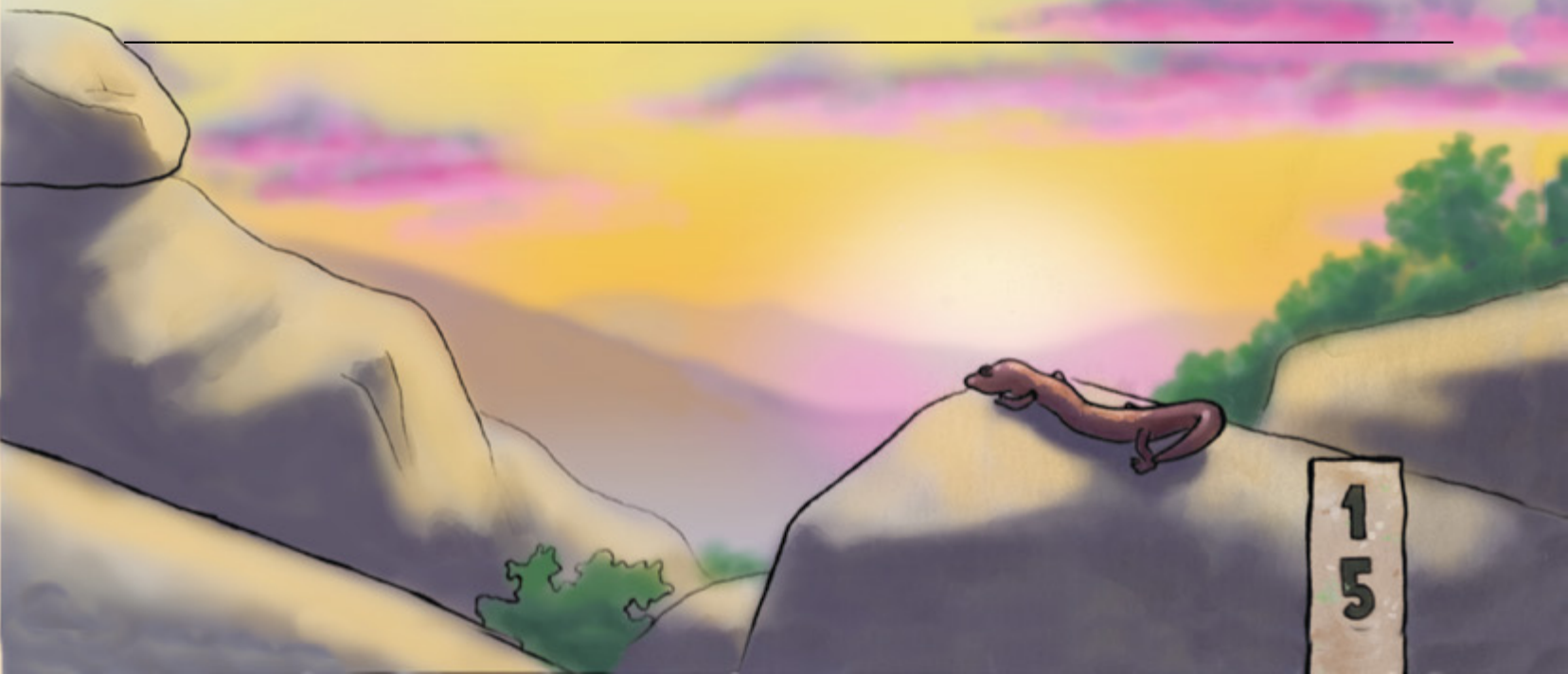
The Shenandoah salamander is a very special animal. Why? This salamander has only one place on Earth where it lives. And that one place just happens to be Shenandoah National Park! That's why it's called a Shenandoah salamander.

☀ Learn a little bit more about the Shenandoah salamander by unscrambling the underlined words in the paragraph below.

The Shenandoah salamander lives underneath sorck _____, slog _____, and valees _____. Its underground world is very different from ours. It slithers around in a small space that is krad _____, loco _____, and tew _____. Salamanders like to eat srowm _____, stagn _____, selteeb _____, and stickerc _____. The Shenandoah salamander doesn't have lungs. It breathes through its niks _____. It lives at the top of the highest mountain kapes _____ in Shenandoah National Park. Why does it choose to live on the highest mountaintops? The air is loocer _____ up there. When an animal is found in only one place on Earth, it is considered to be earr _____. Because there are so few Shenandoah salamanders, they have been classified as an endangered cepiess _____. The Shenandoah salamander faces a threat caused by climate ganche _____. If the Earth warms up too much, the Shenandoah salamander might become teincxt _____.

What do you think the National Park Service can do to help the salamander survive?

Why is it important to protect all species of plants and animals?



IMAGINE YOUR MOUNTAIN HOME

In the early 1900s, hundreds of families lived on this land. They grew crops, hunted, raised animals, and harvested timber.

A lot of people thought this land would make a great national park. So the Commonwealth of Virginia bought the land and the families who lived here had to leave their homes. Then the land was donated to the United States government and Shenandoah National Park was created for everyone to enjoy.

☼ When you're out in the Park, look for old buildings, fences, and cemeteries. Think about what it was like to live in these mountains a century ago.

What evidence did you see that people lived, worked, and died in what is now Shenandoah National Park?

Think about the sacrifices that people made for the Park. Would you leave your home so a national park could be created? _____

Why or why not? _____

Draw your mountain home using this chimney.



TIME TRAVELER

What would it be like to live in a different era?

During the Great Depression in the 1930s, many people had no work. To help them, the Civilian Conservation Corps (CCC) gave young men jobs working in national parks, national forests, and state parks. They built trails, picnic areas, campgrounds, and rock walls, planted trees, and much more! It was hard work, but it resulted in beautiful park trails, landscaping, and facilities that you can enjoy today and forever. CCC boys earned \$30 a month. Most of their money was sent home to their families. CCC boys lived in camps of 150 to 200 people. Shenandoah was the first national park to have a CCC camp.

⚙ Imagine you needed a job to help your family during the Great Depression. If you could, would you join the CCC? Circle yes or no, then pick as many reasons as you want.

YES

I could help my family buy food and pay bills.

I could learn skills to help me get a better job.

Sitting around all day with no job is boring.

Add your own reason:

NO

I don't like working outside. Dirt and bugs are gross!

I don't think I could ever live with 200 people.

I would wait for a better job.

Add your own reason:

Even today there are many programs for young people to work in parks across the country. Visit [nps.gov/gettinginvolved/youthprograms/index.htm](https://www.nps.gov/gettinginvolved/youthprograms/index.htm) to learn more.



OUR CHANGING CLIMATE

During the last big ice age (10,000 to 25,000 years ago) half of North America was covered by a huge glacier. The Shenandoah area didn't have ice, but it sure was different back then. Cold-weather conifers (trees with needles) were everywhere. A few still remain on the Park's highest peaks. Why did things change?

☀ Finish the rhymes by filling in the white box in each poem.

WEATHER

One day might be sunny
The next it might rain
The weather is changing
It doesn't stay the same
We measure the weather
We write it down
So we can look back
Many years from now
That's the big picture
That we need to see
To understand what happens
To a cold-weather

CLIMATE

When we look at weather
Over many, many years
There before our eyes
The climate appears!
Though there might be a cold day
Scattered there and here
We can see that the earth
Is a little warmer each
A cold-weather tree
Can take just so much heat
It will die when it can
No longer compete

THE BIG PICTURE

And when the trees die
Many animals must
Move to a new forest
Or adapt and adjust
Moving can be hard
If you don't have wings
Or long legs to help you
Jump over things
It can take centuries
For adaptations to stick
And our actions are changing
The climate really

Can you help? One person can make a difference.
The choices we make can help minimize our
impact on the environment and the climate.

☀ Junior Rangers can protect the Earth. How can you:

Save energy? _____

Reduce pollution? _____

Protect the environment? _____

To learn more, check out this website with your parents: nps.gov/climatechange

AMAZING STARGAZING

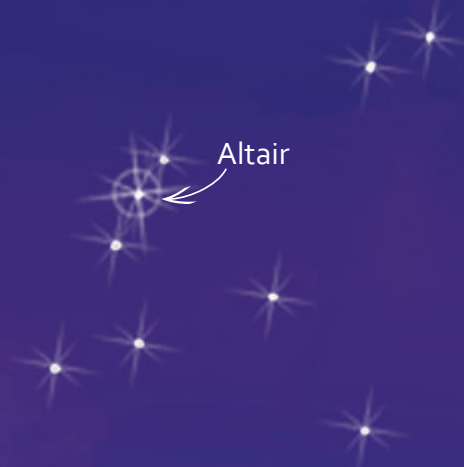
The lights from buildings, streetlights, signs, and headlights can make it hard to see the stars and planets at night. But Shenandoah is far enough away from most of these lights to have a good view of the night sky. If you are in Shenandoah on a clear night, visit an open area without any lights and look up at the sky. Can you see more stars here than at home?

☼ People have imagined making pictures, called constellations, out of the stars. Some of the constellations you might see in Shenandoah include Cygnus - The Swan, Aquila - The Eagle, and Ursa Major - The Great Bear. Connect the dots to complete the constellations below. You may also draw animal shapes around your constellations.

CYGNUS



AQUILA



URSA
MAJOR



Here are a few tips for finding constellations:

- It takes 30 minutes for your eyes to adjust to the dark.
- Try keeping flashlights and bright cell phones off.
- Our galaxy, the Milky Way, is the big band of stars stretching across the sky like a highway!
- The Swan and the Eagle fly toward each other right along the Milky Way.
- The Big Dipper is in Ursa Major. Can you find it above?

WHAT DO RANGERS DO?

Being a Ranger isn't easy. Rangers have to deal with rain, snow, scorching heat, freezing cold, busy crowds, cranky animals, and even a few cranky people. But working in America's most beautiful and historic places can be fun and rewarding.

⚙️ Could you be a Ranger? Before you answer, learn a little bit more about what Rangers do. Circle the correct capitalized word in each sentence below.

Rangers help PRESERVE | DESTROY | DECORATE America's special places.

Rangers HIDE | CARE FOR | REMOVE historic objects.

Rangers ADOPT | CUDDLE | PROTECT all things in the Park.

Rangers lead PARADES | PROGRAMS | OPERAS to educate WILDLIFE | VISITORS | ALIENS.

Rangers protect people and animals by IGNORING | ENFORCING | SINGING the rules and laws.

Junior Rangers can help by KEEPING | MOVING | LEAVING the rocks, plants, and artifacts they find.

A "flat hat" helps keep the SUN | RAIN | SNOW off of a Ranger's face. (*Warning: Trick question!*)

So, do you think you would be a good Ranger? _____

Why or why not? _____



SHENANDOAH NATIONAL PARK

is an official

JUNIOR RANGER



Park Ranger's Signature

Date



As a Junior Ranger, I, _____,
promise to learn all I can to help preserve and protect
Shenandoah National Park and its plants, wildlife,
history, and natural features. When I return home, I
will continue to learn about and teach others how to
protect the natural world.

EXPLORE LEARN PROTECT



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Content by Shenandoah National Park Interpretive Rangers
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For More Information

Become a web ranger online: nps.gov/webrangers

Learn more about Shenandoah National Park: nps.gov/shen

Learn more about TRACK Trails: kidsinparks.com

Learn about the Leave No Trace Principles: Int.org

For more on NPS youth programs: nps.gov/gettinginvolved/youthprograms